Chapter

Myths: Barriers to Fighting the COVID-19 Pandemic

Olabode Omotoso, Teibo John and Gbenga Ojo

Abstract

Myths are widely dispersed but false ideologies or misconceptions. With the thousands of deaths recorded daily and the negative toll of the novel coronavirus disease (COVID-19) on public health, national economy, and human interaction, it remains surprising how people are still being swayed by conspiracy theories. Due to the novelty of the disease, the quest for an answer, what works, and what does not work gave room for the propagation of misinformation, especially on social media. Identifying and debunking myths is very important in managing disease outbreak, since myths can negatively influence the response of people to preventive and containment strategies. Major proponents of COVID-19 myths have promoted their falsehood on the guise that it is a biological weapon engineered to control the world population. Others have also falsely claimed the use of antibiotics or other antiviral drugs in the treatment of COVID-19 and that COVID-19 is no worse than the common flu or it is just the disease of the elderly. This has promoted refusal to take up the COVID-19 vaccine and increased non-adherence to the preventive guidelines. Myths have been a major stumbling block to curtailing the menace of COVID-19. All hands must be on deck to fight this.

Keywords: Myths, COVID-19, preventive, debunk, curtail, media

1. Introduction

Myths are widely proposed false ideas or misconceptions. Since the start of the novel coronavirus disease (COVID-19), several misconceptions have arisen. Belief in the misconceptions could debar certain individuals from adhering to the preventive guidelines leading to the rapid spread of the disease, low vaccine uptake and ultimately, unnecessary deaths. A myth is a story that was told in an ancient culture to explain a practice, belief, or natural occurrence. It is a story that is believed by many people but is not true. Myth is currently commonplace even among the populace, it is confusing and detrimental to the immense efforts put towards fighting the ravaging pandemic [1]. To say that certain stories are in circulation from ancient cultural beliefs from some 'god' or deity imposed/inflicted punishment is contrasting to the facts and reality of the COVID-19 [2].

Ab initio of the COVID-19, which is gradually becoming an endemic, so many myths about the unprecedented outbreak have risen, though untrue, it has facilitated the spread of the virus to about 219 countries, continents, territories and communities with varying belief systems, ways of life and communal practice. However, as unrealistic as this is, it is widely believed by many. Unverified facts which have turned into truth for many have become insurmountable barriers

against the fight raised against COVID-19. Several myths ranging from the cause of the disease to those susceptible to it, to the assumed cure and even overrated known means of management exist in the premise of the COVID-19. These myths have blurred the line between management and cure, facilitated the rapid spread and even claimed the lives of many with millions of deaths recorded daily on a global scale. The pandemic has a negative toll on public health, national economy, and human interaction, it remains surprising how people are still being swayed by myths and conspiracy theories.

Knowing some of these myths would reveal the ignorance of many and shed more light on the real path to combating the disease [2]. First, if we agree that myths are propagated and perpetuated by ignorance, we must seek knowledge to terminate them, which is where the role of professionals is key in this fight. What we have known since the upsurge of the disease will help rather than what is assumed. Those known facts will then point out false stories or beliefs that must be eradicated.

Because it is safer to move from known to unknown in solving a problem, and there have been stories with unverified sources which are unknown, it is better to consider those facts that have been verified by professionals over the past few months to distinguish between mere myths and facts. In this chapter, we would highlight several myths that have been propagated around it stating how those myths have been a barrier in the fight against the pandemic and what are the reasons or factors responsible for the propagation of these myths, the aftermath and implication of the COVID-19 myths, how to curtail and debunk the myths with evidence or facts and general recommendations and conclusions.

2. Common myths about COVID-19

Myths and misinformation are non-validated concepts or ideologies that are believed by a group of people. Identifying and debunking myths is very important in managing a disease outbreak since myths can negatively influence the response of people to preventive and containment strategies [3]. Within few months of the viral outbreak, it has spread across all continents and has claimed millions of lives. As of June 02, 2021, 22:35 GMT, the death toll due to COVID-19 has reached 3,683,305 deaths from 171,331,780 confirmed cases in 219 countries across the globe [4]. This has brought untold hardship, pressure, and pain to countless individuals across the globe.

The COVID-19 is a novel disease that caught everyone unawares. Due to the novelty of the virus, everyone was looking for an answer as to the origin of the virus, how it spreads, preventive mechanisms, and its mechanism of action, treatment or management of infection and symptoms and how best to curtail its menace. The quest for an answer, what works, and what does not work gave room for the propagation of information and misinformation about the pandemic, most especially on the social media space. Several efforts have been put in place by public health experts, researchers, governments, social response workers, and virtually everyone to understand and curtail the menace of the COVID-19 pandemic. The development, approval and administration of COVID-19 vaccines have brought a sort of relief and hope for almost everyone. Despite this, there are still thousands of confirmed cases and reported deaths on daily basis. Due to the high human-human transmission rate of the virus, the WHO instituted guidelines to help curtail the spread of the virus such as the washing of hands with soap frequently, the use of alcohol-based hand rubs and many more (**Figure 1**).

Since the outset of the pandemic, myths and misinformation about the pandemic have served as a stumbling block or hindrance to the populace acceptance of

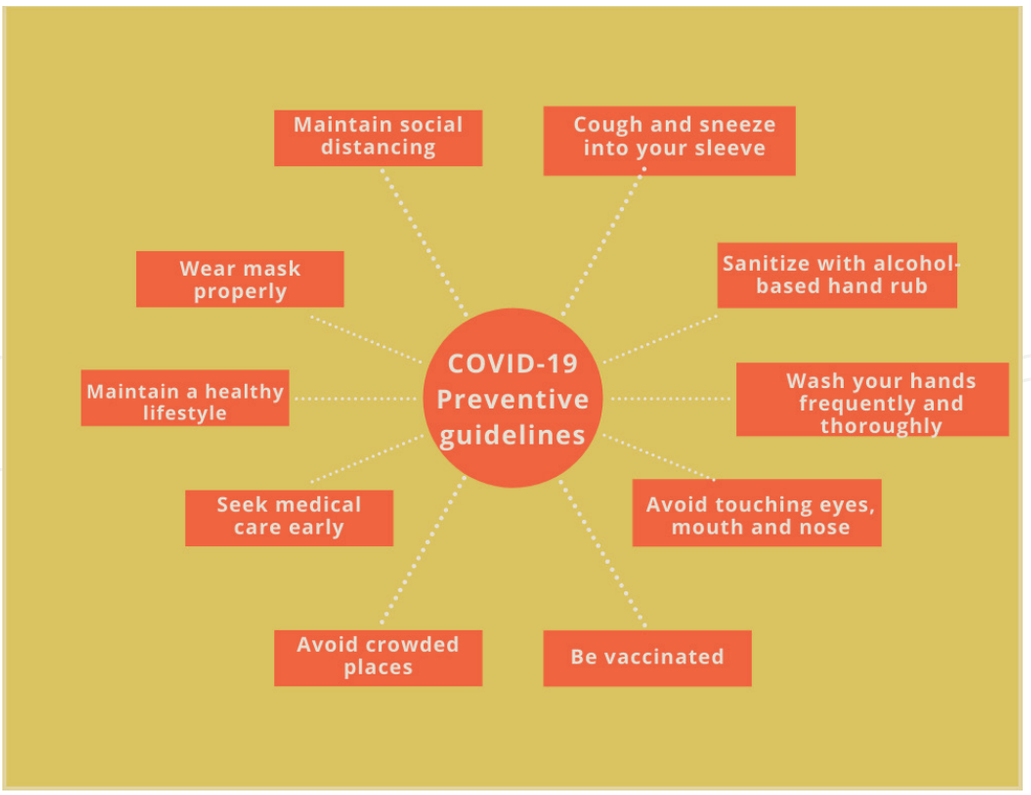

Figure 1.
Instituted preventive guidelines against COVID-19.

instituted guidelines that can reduce the risk of infection. A study [3] on healthcare workers in South Africa identified that myths and misinformation influenced the public's response negatively to the COVID-19 screening campaign. It is quite worrisome that despite the safety rate and promising action of the COVID-19 vaccines, many individuals have decided neither to adhere to the preventive guidelines nor to accept the vaccines. Such individuals do not only put themselves at risk but other thousands of innocent people in their community. Here we highlight common myths and misinformation about the pandemic and their implication in the fight against the pandemic (**Figure 2**).

2.1 COVID-19 is a hoax

Conspiracy theorists, religious fanatics, pseudoscience and science denialists have always been present in the online space looking for means to peddle their belief to unsuspecting individuals [5]. Policies like travel restrictions and total lockdown gave room for much reliance on social media and the internet for information, especially about COVID-19. The novelty of the pandemic and the quest for information has given them a ground to catch many individuals unawares and get them to believe their claim. This has posed a major challenge to the fight against COVID-19 by its generation of fake cure claims, dismissal of public health expert's advice, stigmatization and spread of fear among many others [3, 6]. This is further aggravated when this misinformation is propagated by celebrities and influential people [3]. Major proponents of this claim have promoted their falsehood on the guise that COVID-19 is a biological weapon that was intentionally engineered in a laboratory to control the world population or a means for government and/or public-private enterprise for selfish gains. This is a major stumbling block to curtailing the menace of COVID-19. This has promoted refusal to uptake the COVID-19 vaccines and non-adherence to the preventive guidelines [6].

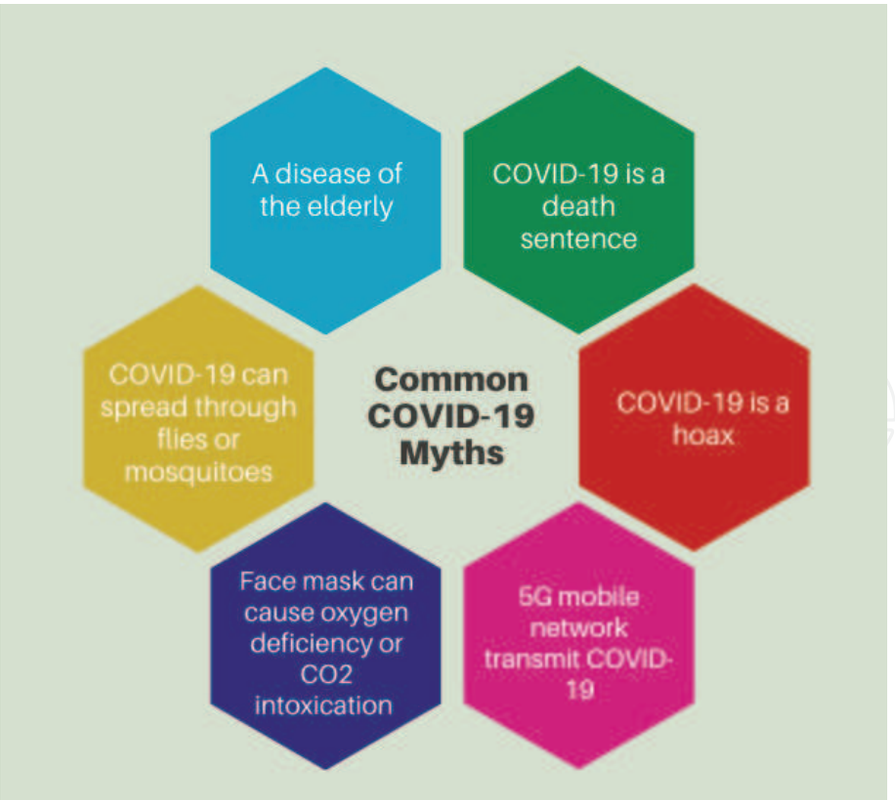

Figure 2.
Common myths about the COVID-19.

2.2 COVID-19 is a death sentence

Although there is a high transmission rate of the virus, it is good to note that the death rate due to COVID-19 is very low compared to other infections due to coronaviruses (MERS in 2012 and SARS in 2002) and other diseases like HIV/AIDS, cancer, and neurodegenerative diseases. Most COVID-19 infected patients will have no or mild symptoms and recover without any professional medical assistance or care. With appropriate care, most infected patients would recover. Most COVID-19 related deaths have been reported in infected patients who are elderly or those who have a weak immune system due to co-morbid health condition like cardiovascular disease, diabetes, chronic respiratory disease, hypertension, HIV/AIDS, cancer etc. As shown in **Table 1**, the death rate increases across all age group among infected patients with underlying health conditions compared to those without co-morbidities.

Age	Number of deaths	Share of deaths	With underlying condition	Without underlying condition
0–17 years	3	0.04%	3	0
18–44 years	309	4.5%	244	25
45–64 years	1581	23.1%	1343	59
65–74 years	1683	24.6%	1272	26
≥ 75 years	3263	47.7%	2289	27
Total	6839	100%	5151	137

Table 1.
Comparison of COVID-19 death rate across age group.

2.3 COVID-19: a disease of the elderly

There have been several reports of young people who get infected and even die due to COVID-19. As earlier mentioned, COVID-19 seems to be more lethal in older people. However, anyone can get infected and develop severe symptoms including young people. The risk for severe symptom from COVID-19 increases with age, those with immune-compromising conditions and a weak immune system, which are more peculiar to older people. Severe illness implies the infected patient will require hospitalization, a ventilator, and professional medical care. Data from **Table 1** provided by New York City Health [7] as of April 14, 2020, shows the disparity in the death rate among the different age group.

As shown in **Table 1**, anyone can be infected with COVID-19 and not only elderly people, although the mortality rate increases with increasing age.

2.4 Shielded by extreme weather conditions

There have been several proponents that the virus cannot survive in a very hot or cold region [8]. Regardless of the temperature or weather condition in the environment, the normal body temperature ranges from 36.5–37°C. More so, there has been a report of COVID-19 infection across all continents (even in countries with hot or cold weather condition).

2.5 Chloroquine, dexamethasone, vitamins and minerals for treating COVID-19

At present, there is no proven cure for COVID-19 [5] rather several vaccines have been developed with promising effectiveness. The best intervention, for now, is vaccination with any of the available approved COVID-19 vaccines. The use of micronutrients (Zinc, vitamins C and D) is well advised to improve the immune system and in promoting overall health. However, there is no evidence of their effectiveness as a treatment option against COVID-19. Dexamethasone, a corticosteroid, at a daily 6 mg dose has been shown to improve the health of some COVID-19 patients on ventilators. However, it showed no improvement for infected patients who had mild symptoms. Chloroquine is a potent antimalarial and rheumatoid arthritis drug, clinical trials have shown no impact in it preventing COVID-19 infection or death [9]. Hence, caution should be taken against stockpiling and self-medication, especially without professional oversight. Garlic and turmeric contain phytochemicals that have antimicrobial properties with promising health benefits. However, there is no supporting evidence of its ability to prevent COVID-19 [8, 10].

2.6 Drinking very cold or hot drinks can prevent infection

Most infected patients will recover with little or no medical care. Taking lots of liquids with essential nutrient composition can help stay well hydrated, improve the immune system, and ensuring a balanced diet. However, there is no approved or proven drink (whether hot or cold) to protect against or cure COVID-19 infection [8, 10].

2.7 Strong disinfectant can protect against infection

Drinking hand sanitizers, ethanol, methanol, or strong disinfectants in a bid to protect against COVID-19 infection can result in very serious health complication [5, 8]. Frequent handwashing with soap and water under running water or rubbing with an alcohol-based hand rub has been recommended as important preventive

guidelines. These are meant to be used on the hand and not to be drunk or bathed with as they can result in eye irritation and skin damage. Rinsing the nose with saline has not also shown to offer protection against COVID-19.

2.8 COVID-19 can spread through flies or mosquito bite

COVID-19 is primarily transmitted through exposure to droplets from an infected person or touching a contaminated surface area. Proper handwashing after touching a contaminated surface can offer protection. It is likewise important to avoid touching body parts (eyes, nose and mouth) with unwashed hands and to frequently disinfect surface areas that are often touched or handled. Mosquitoes are vectors for fever. No evidence has linked COVID-19 transmission to either house flies or mosquitoes [5].

2.9 The use of antibiotics

Antibiotics are a potent treatment option for bacterial infection. COVID-19 is caused by a virus, not bacteria. Antibiotics are only recommended for some COVID-19 patients that develop a bacterial infection.

2.10 Face mask can cause oxygen deficiency or carbon dioxide intoxication

Many proponents of this misinformation have held on to this to dissuade people from adhering to the use of face mask. The use of a face mask can be discomforting. When properly worn, a face mask does not result in either oxygen deficiency or CO_2 intoxication. It is advised that face mask be properly worn, not to be worn during exercise activities or when swimming and disposable masks should not be reused.

2.11 Use of thermal scanners and hand dryers

High fever is one of the common symptoms of COVID-19. Thermal scanners can detect people who have high body temperature or fever but not COVID-19 [10]. It takes about 1–14 days for the virus to incubate and to show observable symptoms, hence, thermal scanners may not detect high fever in asymptomatic patients. There are diverse types and causes of fever. It is important to seek proper medical care or go for testing when a very high fever is observed. Hand dryers cannot kill COVID-19 but are only recommended for use to dry hands after thorough and frequent hand washing.

2.12 5G Mobile network transmitted COVID-19

5G mobile network is an advancement in information technology. Viruses like SARS-CoV-2 cannot be transmitted via mobile networks, wireless internet or radio waves as being propagated [5]. Interestingly, COVID-19 transmission has been reported in many countries with no 5G mobile network.

2.13 Pneumonia vaccines offer protection

Pneumonia vaccines (Haemophilus influenza type B vaccine and pneumococcal vaccine) do not offer immunity or protection against COVID-19 [10]. Despite the novelty of the virus, researchers and public health experts have been able to design vaccines that have passed clinical trials and approved for use against the COVID-19.

Though there has been cause for alarm over the new emerging variants of the SARS-CoV-2, existing studies show the effectiveness of these vaccines to a great extent.

3. Factors responsible for myth propagation

3.1 Ignorant belief and assumption

It is appalling that being the 21st century as it is, traditional archaic beliefs are still held in high esteem in certain parts of the world and these beliefs are spread quickly across the globe. Most of these ignorant beliefs are generated from underdeveloped sources, and because most people who reside in these settlements have poor or low technological advancement, and they turn a deaf ear to latest information about the pandemic and are unwilling to adapt to change.

3.2 Fake news or false information peddled via the media

Since the outbreak of the pandemic, there has been the circulation of several untrue information about it reaching people from trusted platforms. Many believed the information and tried to work with it, they then discovered it was false, consequently, there has been a guard against subsequent information targeted at fighting the pandemic. This has limited what can be done to alleviate the situation, the news then proceeds to become myths [6].

3.3 Socioeconomic vulnerability

This is another barrier to the fight that generates myths. The belief that the disease only affects the rich, especially those who are rich enough to travel via air route, is a factor that leads to myths. Most of the population in underdeveloped and developing countries are so poor that they prioritize their struggle to get food and basic means of livelihood to being sick or even death.

Most of these impoverished populaces believe that food comes first, then health, therefore the disease keeps moving as they move about seeking the basic means of livelihood they cannot afford and do not have access readily to face masks, sanitizers and soap for disinfection, with this condition, the myth is sustained. An earlier study [11] reveals two main categories of perceived facilitators of COVID-19 spread in Ethiopia, they are behavioral non-adherence (55.9%) and lack of enablers (86.5%). Behavioral non-adherence was illustrated by fear of stigma (62.9%), not seeking care (59.3%), and hugging and shaking (44.8%). Perceived lack of enablers of precautionary measures includes staying home impossible due to economic challenges (92.4%), overcrowding (87.6%), inaccessible face masks (81.6%) and hand sanitizers (79.1%). Perceived inhibitors were categorized into three factors: two misperceived, myths (31.6%) and false assurances (32.9%) and one correctly identified; engagement in standard precautions (17.1%).

3.4 Poor housing facility/overcrowding

The popular belief that coronavirus does not survive in hot places is backed up by this condition. Probably due to financial constraint or outright ignorance of its dire consequences in the future, many housing facilities like slums used in underdeveloped and developing countries are promoting factors for the spread of COVID-19. These houses encourage neighbor-hood spread rapidly standing in the way of the fight against COVID-19. As people stay on in such an environment, the propagation of the myth is sustained.

3.5 Disobedience/unhealthy curiosity

Some people are just simply disobedient to authority while others are curious to know what would happen if they do not keep the precautions. Because of this, the startup stories that suit them just buttress their act of disobedience. Either of these is unhealthy or are strong barriers to putting a stop to the spread of the disease.

3.6 Illiteracy or low level of education

Some people find it difficult to interpret information received and to comply with safety precautions because of low levels of education. They go about with untrue stories that contradict what is proven. Education breaks the barrier of ignorance, interprets possible consequences to the mind and facilitates easy adherence to precautions, the reverse is the case with a low educated person, thereby posing a barrier to fighting the pandemic.

Studies have shown that those with low levels of education have often misunderstood or taken with levity the public health guidelines which have prompted the spread of the virus. An earlier report [12] showed that men; black persons; those with lower health literacy, co-morbidities; those living below the poverty level; and persons who were unmarried, unemployed, or retired were less likely to make changes because of the coronavirus.

3.7 Government or leadership failure

Due to the previous failure on the part of the leaders, several myths have been generated to counteract the efforts being put into the fight against COVID-19, some just as a way of rebellion or some created as a belief of punishment for those leaders who are infected. These have caused many of the populace not to focus on their health but instead be on the lookout for the victim among the government officials that would be reported to have the virus or being dead because of the virus.

3.8 Belief in history repeating itself

As a result of the Spanish flu of 1918 which is a major pandemic that happened 102 years ago, many historian manic believed history was simply repeating itself and there is no major effort that prevents the escalating potential of the pandemic with the slogan "whatever would be would be". This hampers the initial effort that needed to be put in place in curtailing the spread and sensitization of the populace early enough.

4. Perspective and conclusion

From the hitherto discussed, one fact has been established. That the emergence of myths poses a great danger to the prevention and the halting of further spread of the COVID-19. Whether orchestrated by the different factors we have highlighted or because of other truisms our purview did not cover, fake news, a mythical approach to the novel virus is and has been detrimental to efforts to curtail it both nationally and globally. Combating the menace of misinformation must be a course of action any worthy academics must take seriously. That is what we have done here.

However, from another point of view, some may argue that how can we say for certain that what we generally refer to as unfounded myths about the coronavirus are unfounded? What exactly convinced us of their falsity? Is it because these other views regarded as myths are unpopular or because we have some facts indicating their

falsity? Is it not possible that the majority can be wrong? These are questions with far-reaching implications. The history of science is replete with examples whereby the whole scientific community was wrong, and the so-called lonely voices of dissidents were right. In some moments of history, only conspirators were promoting heliocentricity, the real science of the time was touted as geocentricity. It is dissenting voices of the likes of Galileo, Copernicus, Newton, Einstein etc. that has sometimes proven what we have previously known to be false as true. Some may argue then that, it is possible that what seems to be legends of superstitious origin today may come to be flawless truth when further evidence appears. As the American writer Richard Rorty noted, declaring a viewpoint as true or false, one myth and another fact, are ways we condemn or praise views that we like or disagree with not that one is true or false [13]. Going by this, it can be argued then that since we do not have enough knowledge about the coronavirus, it will be too early to classify some views as fake, true, false or myths.

Nonetheless, we must correct any position or postulation presented in the fashion previously stated for two reasons. First, comparing scientific disagreement exemplified in the likes of Galileo, Newton or Einstein can and must not be likened to COVID-19 myths. The reason is conspirators and fake news peddlers have not given any evidence for their theories. They start and end with them postulating it. In the case of scientific dissidents like Galileo, evidence was presented, and, in the end, the truth prevailed. In the case of COVID-19 conspirators, it is not the case that evidence is not enough they are non-existent. Hence, they do not belong to the same category as the moment in which scientific postulation disagrees with known facts.

Secondly, although we do not possess enough knowledge on the COVID-19, it remains a fact that we know a lot already and based on what we currently know, conspirators can be declared false and mythical engagement as cheer falsity. We do not need to know everything about everything to distinguish between what is true or false. One does not need to be in New York to state that it is true that it is in the United States of America and that it is the most populated State therein. In like fashion, scientific knowledge is always open-ended. The reason, a future scientist will retest and re-examine the findings of their predecessors. So, any view that states we cannot distinguish between what is true or false because we do not know all there is to know about COVID-19 is unfounded, illogical, and naïve. We can never know everything about something. Future evidence will either validate or invalidate our present knowledge but based on the authority of our present knowledge, we can always make an informed decision about what is true or false. Given what is presently available, therefore, some views as we have earlier highlighted cannot be vindicated of their mythical nature.

Conclusively, the emergence of fake news and misinformation about the novel coronavirus places a very stringent task on our shoulders. It is the task of always soliciting the truth. Just as the influx of true findings on the virus is enormous, the continuous appearance of convincing conspiracies has crossed a barrier of obscurity into a limbo zone of our postmodern kitsch. Notwithstanding, the question we must always ask when faced with any postulation, comments, theory, or information on COVID-19 is "where are the evidence?" Swallowing any theory either politically motivated or culturally and religiously infused is detrimental not only to individual survival but also to the overall interest of our ailing world. Myth, to be candid, is an amorphous concept rejecting classification either of truth or falsity, but when evidence is lacking or are incoherent, we can assertively declare not just that they are false but more so that they are dangerous and must be tenaciously fought into oblivion.

Conflict of interest

The authors declare no conflict of interest.

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